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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,731	08/31/2001	Susumu Takahashi	1186.1019	8415

21171 7590 08/20/2004

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EXAMINER	
RAO, SHRINIVAS H	

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/942,731	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Steven H. Rao	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/22/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28,30-43,45-54 and 56-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-28,30-43,45-54 and 56-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/22/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

Applicants' amendment filed on April 26, 2004 has been entered on June 16, 2004.

Therefore claims 1-7,9-15,17-24,26-28,30,33-39,41-43,45-47,49-54,56 and 58-60 as amended by the amendment and claims 8,16,25,29,31-32,40,44,48 and 55as originally filed and presently newly added claim 61 are currently pending in the Application.

Drawings

The formal drawings filed on December 05, 2001 are acceptable and the previous drawing rejections are withdrawn.

Information Disclosure Statement

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filed on April 22, 2004

The references on PTO 1499 submitted on 04/2/2004 are acknowledged. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

Applicants' have only submitted an English translation of the Office Action from the Taiwanese Patent Office, but have not submitted translations of the actual references itself.

The PTO-1449 will be initialed upon receipt of the English translation/abstract of the actual references itself.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-28,30-43,45-54 and 56-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanabe et al. .(U.S. Patent No. 6,118, 586 herein after Tanabe).

With respect to claims 1, 9, 20, 52 Tanabe describes an optical film comprising an array of diffraction grating cells arranged in a matrix, (col.2 lines 60-65, etc.) each cell comprising blazed type or binary type curved gratings. (Tanabe figures 2/3, etc. and Col. 10 lines 63 to 67).

With respect to claims 2, 10, 21,42,53 Tanabe describes the optical film according to claim 1, wherein said gratings of different grating cells contain different profiles. (col. 5 lines 34-48 and Col. 10 lines 63 to 67).

With respect to claims 3, 11,22, 43,54 Tanabe describes the optical film according to claim 1, wherein said gratings of different grating cells contain the same profile and arranged in parallel with each other. (col. 5 line 30-34). (LCD layer and display (cl.9) col.2 lines 56-62 and Col. 10 lines 63 to 67).

With respect to claims 4,12, 23,44 Tanabe describes the optical film according to one of claims 1 to 3, wherein said gratings of each grating cells include at least two grating pitches.((col. 7 lines 17-30 and Col. 10 lines 63 to 67).

With respect to claims 5,13 24, 37,45,56 Tanabe describes the optical film according to one of claims 1to 3, wherein an angle of a slope of the gratings of different rating cells is uniform. (Tanabe figure 2 and Col. 10 lines 63 to 67).

With respect to claims 6, 14, 38,46 Tanabe describes the optical film according to one of claims 1 to 3, wherein a surface of said diffraction grating cells of each of the grating cells is provided with a reflection layer. (Figure 1,9 and Col. 10 lines 63 to 67).

With respect to claims 7,15,25, 28, 39,47 Tanabe describes the optical film according to one of claims 1to 3, wherein each of the gratings of each of the grating cells has a gentle slope and a steep slope in a cross section and a surface of the gentle slope is provided with a reflection layer. (figures 2 and 3, and see above rejections and Col. 10 lines 63 to 67).

With respect to claim 8, 16, 26, 40 ,48 and 57 Tanabe describes the optical film according to one of claims 1 to 3, wherein fine rectangular or elliptic projections or recesses are formed on a surface of said diffraction grating cells with a short axis thereof agreeing with a direction of juxtaposition of said gratings. (Tanabe col. 16 lines 23-35, and Tenantable figs. 2,3 and Col. 10 lines 63 to 67).

With respect to claims17, 49 ,58 Tanabe describes the display device according to one of claims 9 to 11, wherein said liquid crystal display layer comprises an array of pixels arranged in a matrix; and said diffraction grating cells and said array of pixels show a one-to-one correspondence. (Tanabe example 8 , col.16 lines 23-35 and Col. 10 lines 63 to 67).

With respect to claim 18 Tanabe describes the display device according to one of claims 9 to 11, wherein said liquid crystal display layer comprises array of pixels . (Tanabe col. 6 line 62 to col. 7 line 6 and Col. 10 lines 63 to 67).

With respect to claims 27,and 59 Tanabe describes LCD layer having an array of pixels arranged in a matrix; and a pitch of arrangement of said array of diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. (Tanabe col. 16 line 36 to 44 and Col. 10 lines 63 to 67).

With respect to claim 19, 51 Tanabe describes the display device according to one of claims 9 to 11, wherein the grating has a gentle slope and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. (Tanabe figures 2 to 6 etc. and Col. 10 lines 63 to 67) .

With respect to claim 30 Tanabe describes an optical film comprising: an array of diffraction grating cells arranged in a matrix,each of the grating cells comprising curved gratings, wherein said gratings include at least two grating pitches. (rejected for reason set out under claims 1 and 2 above).

With respect to claim 31 Tanabe describes the optical film according to claim 30, wherein said diffraction grating cells are blazed type diffraction grating cells. (rejected for reason set out under claim 1 above).

With respect to claim 32 Tanabe describes the optical film according to claim 30 wherein said diffraction grating cells are binary type diffraction grating cells. (rejected for reason set out under claim 1 above).

With respect to claim 33 Tanabe describes the optical film according to one of claims 30 to 32, wherein, a pitch dy of said array of the gratings is changed in a cell so as to change either or the tangent of a y stepwise by a constant value, wherein is an angle in the vertical direction at which incident light enters the diffraction grating cells,a y is an angle in the vertical direction at which diffracted light emits from the diffraction grating cells, and ~, (= dy x (sin 8 + sin ay)) is a wavelength of diffracted light. (col. 10 lines 17 to 29 and Col. 10 lines 63 to 67).

With respect to claim 34 Tanabe describes the optical film according to one of claims 30 to 32, wherein a pitch of said array of the gratings in a diffraction grating cell is constant and a pitch of said array of the gratings is changed from cell to cell so as to change either a y or the tangent of a y stepwise by a constant value, wherein H is an angle in thevertical direction at which incident light: enters the

diffraction grating cells, ay is an angle in the vertical direction at which diffracted light emits from the diffraction grating cells, and 2,(= dy x(sin 8 + sin ay)) is a wavelength of diffracted light. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67).

With respect to claim 35 Tanabe describes the optical film according to one of claims 30 to 32, wherein a pitch of said array of the gratings in a diffraction grating cell is constant and there are at least two grating pitches of said array of the gratings among the diffraction grating cells, a difference of the pitches being not greater than a value corresponding to the half-width of light diffracted by the cell or a value corresponding to the width of light diffracted by the cell. (col. 9 lines 63-67 and Col. 10 lines 63 to 67).

With respect to claim 36 Tanabe describes the optical film according to one of claims 30 to 32, wherein said gratings of different grating cells contain the same profile and arranged in parallel with each other. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67).

With respect to claim 41 Tanabe describes a display device comprising : a liquid crystal display layer which forms an image to be displayed; and a light reflecting optical film which is arranged on a rear surface of the liquid crystal display layer (figures 4,5 etc.) and comprises an array of diffraction grating cells arranged in a matrix, each cell comprising curved gratings, whereinsaid gratings of each of the grating cells include at least two grating pitches. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67).

With respect to claim 50 describes the display device according to one of claims 41 to 43, wherein said liquid crystal display layer comprises an array of pixels arranged in a matrix; and a pitch of arrangement of said diffraction grating cells is integer times of a

pitch of arrangement of said pixels or vice versa. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67).

With respect to claim 60 Tanabe describes the display device according to one of claims 52 to 54, wherein the grating has a gentle slop and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. (Tanabe figure 6 , col. 6 last line to col. 7 lines 1-2).

With respect to claim 61, Tanabe describes a display device including a liquid crystal display layer (Tanabe col.2 line 54), a plurality of drive electrodes in proximity to the liquid crystal display layer (assuming arguendo no new matter exists)and a light reflecting optical film including a plurality of diffraction grating cells arranged in a matrix, each of the diffraction grating cells including at least one of a blazed type and a binary type grating, wherein the drive electrodes from the light reflecting optical film and wherein each of the drive electrodes includes one of the diffraction grating cells.

Response to Arguments

Applicant's arguments filed April/22/2004 have been fully considered but they are not persuasive. for the following reasons :

Applicants' first contention that Tanabe's teachings should be limited to a single set of diffractive element instead of an array of diffraction grating cells as recited in the amended claims is not persuasive because of the following :

(a) Tanabe in col. 10 lines 63 to 67 states :

In the foregoing, a single diffracting element has been described. However, it is for example, possible that diffracting elements having a plurality of liquid crystals filled on a transparent substrate of a size of 120×120 mm, are formed, and they are finally individually separated. With respect to

Therefore Tanabe also teaches a plurality of diffracting elements .

(b) It is well settled law that duplication of the essential working parts of a device involves only routine skill in the art and cannot form the basis of patentably distinguishing claims. St. Regis Paper co. V Bemis Co., 193 USPQ 8.

Applicants' contention (w.r.t claims 2 and 4) that Tanabe only discloses laminating diffraction sheet on grating and does not teach different profiles is not persuasive because Tanabe in co. 5 lines 19-20 teaches several different asymmetrical shapes (different profiles) and different grating cells (col. 10 lines 63 to67).

Similarly w.r.t claim 17, Tanabe in col. 10 lines 63 to 67 discloses a plurality of pixels as shown above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

Steven H. Rao

Patent Examiner

August 09, 2004.

LONG PHAM
PRIMARY EXAMINER